

In the claims:

1-30. (Canceled)

31. (Previously Presented) A high-stability, low emission, fuel emulsion composition for a reciprocating engine comprising:

purified water being substantially 28 -50% by weight of said fuel emulsion composition wherein water is a continuous phase of said fuel emulsion;

hydrocarbon petroleum distillate being substantially 43-70% by weight of said fuel emulsion; and

additives being at least 1% by weight of said fuel emulsion wherein said additives includes:

an ignition delay modifier being substantially .1%-.4% by weight of said fuel emulsion wherein said ignition delay modifier improves fuel detonation characteristics of said fuel emulsion and includes Ammonium Nitrate that acts as an emulsion stabilizer

a neutralizer being substantially .05%-.4% by weight of said fuel emulsion wherein said neutralizer reduces corrosion caused by acids in said fuel emulsion,

a coupling agent substantially .04%-.1% by weight of said fuel emulsion wherein said coupling agent maintains phase stability of said fuel emulsion at high temperatures and shear pressures of an internal combustion engine wherein said coupling agent is a one selected from a group consisting of: a di-acid of the Diels-

Alder adducts of unsaturated fatty acids and a tri-acid of the Diels-Alder adducts of unsaturated fatty acids and wherein said neutralizer combines with a select acid to form a water soluble salt, and

at least one additive selected from a group consisting of:

a surfactant being substantially .3%-1% by weight of said fuel emulsion wherein said surfactant facilitates formation of a stable emulsion of said hydrocarbon distillate within said continuous phase of water,

a lubricant being .04% to .01 by weight of said emulsion to improve lubricity of said fuel emulsion,

a corrosion inhibitor being substantially .05% by weight of said fuel emulsion, and

biocides being less than .0005% by weight of said fuel emulsion wherein said biocides are an anti-foam agent.

32. (Previously Presented) The fuel emulsion of claim 31 wherein said surfactant includes at least one selected from the group consisting of: an alkylphenoethoxylate, an alcohol ethoxylate, a fatty alcohol ethoxylate, and an alkyl amine ethoxylate.

33. (Previously Presented) The fuel emulsion of claim 32 wherein a selected alkylphenoethoxylate is a polyethoxylated nonylphenol having between 8 and 12 moles of ethylene oxide per mole of nonylphenol.

34. (Previously Presented) The fuel emulsion of claim 33 wherein said nonylphenol is 2,6,8-Trimethyl-4-nonyloxypolyethyleneoxyethanol.

35-36. (Canceled)

37. (Previously Presented) The fuel emulsion of claim 36 wherein said polyethoxylated nonylphenol is added at substantially 1000-3000 ppm.

38. (Previously Presented) The fuel emulsion of claim 32 wherein a selected alcohol ethoxylate is a C₁₁ alcohol ethoxylate with 5 moles of ethylene oxide per mole of alcohol.

39. (Canceled)

40. (Previously Presented) The fuel emulsion of claim 31 wherein said surfactant is at least one selected from a group consisting of:

octylphenoxypolyethoxyethanol added to said fuel emulsion at substantially 100-300 parts per million of said fuel emulsion, octylphenol aromatic ethoxylate added at substantially 1000-3000 parts per million of said fuel emulsion, and ethoxylated alkyl phenol added at substantially 1000-2000 parts per million of said fuel emulsion.

41. (Previously Presented) The fuel emulsion of claim 31 wherein said lubricant is at least one acid selected from a group consisting of: a mono-acid, a di-acid, and a tri-acid.

42. (Previously Presented) The fuel emulsion of claim 41 wherein said selected one acid is a one selected from a group consisting of: a phosphoric acid adducted to an organic backbone and a carboxylic acid adducted to an organic backbone.

43. (Previously Presented) The fuel emulsion of claim 42 wherein said organic backbone includes from about 12 to 22 carbon molecules.

44. (Previously Presented) The fuel emulsion of claim 42 wherein said selected at least one acid is said phosphoric acid adducted to said organic backbone that includes mixed esters of alkoxylated surfactants in phosphate form.

45. (Previously Presented) The fuel emulsion of claim 42 wherein said selected at least one acid is said phosphoric acid adducted to said organic backbone that includes a one selected from the group consisting of a di-acid of the Diels-Alder adducts of unsaturated fatty acids and a tri-acid of the Diels-Alder adducts of unsaturated fatty acids.

46. (Previously Presented) The fuel emulsion of claim 31 wherein said additives includes a neutralizer that is an alkanolamine.

47. (Previously Presented) The fuel emulsion of claim 46 wherein said alkanolamine includes one selected from a group consisting of: amino methyl propanol, triethanolamine, and diethanolamine.

48. (Previously Presented) The fuel emulsion of claim 31 wherein said additives include said corrosion inhibitor wherein said corrosion inhibitor is an aminoalkanoic acid.

49. (Previously Presented) The fuel emulsion of claim 31 wherein said additive includes said ignition delay modifier which includes one selected from a group consisting of a nitrate, a nitrite, and peroxide.

50. (Previously Presented) The fuel emulsion of claim 31 wherein said additive includes said ignition delay modifier that is 2-ethylhexylnitrate.

51. (Previously Presented) The fuel emulsion of claim 31 further comprising:
anti-freeze being substantially 2%-9% by weight of said fuel emulsion.

52. (Previously Presented) The fuel emulsion of claim 51 wherein said anti-freeze is an organic alcohol.

53. (Canceled)